

ACHA3000
2103851

$$\begin{aligned} 5. \quad 6x + 5y &= 35 \quad \times 4 \\ 7x - 4y &= 31 \quad \times 5 \end{aligned}$$

$$\begin{aligned} 24x + 20y &= 140 \\ 35x + 20y &= 155 \quad + \\ \hline 54x &= 295 \\ x &= 5 \end{aligned}$$

$$\begin{aligned} (6 \times 5) + 5y &= 35 \\ 30 + 5y &= 35 \\ 5y &= 5 \\ y &= 1 \end{aligned}$$

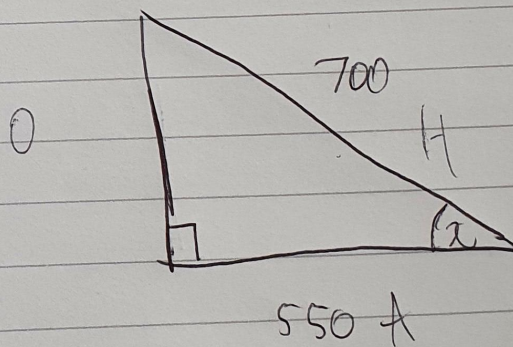
$$6-i) 10p^3q^2 - 5p^2q + 15p^4q$$

$$5p^2q (2pq - 1 + 3p^3q)$$

$$ii) 2x^2y - 4xy^2$$

$$2xy (x - y)$$

$$\begin{aligned} 7-i) a^2 + 550^2 &= 700^2 \\ a^2 &= 700^2 - 550^2 \\ a^2 &= 187500 \\ a &= \sqrt{187500} \\ a &= 433.01 \text{ m} \end{aligned}$$



$$ii) \cos x = \frac{550}{700}$$

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$$\begin{aligned} \cos x &= \frac{11}{14} \\ x &= \cos^{-1}\left(\frac{11}{14}\right) \\ x &= 38.21^\circ \end{aligned}$$

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$$3. i) x^2 + 4x + 14 = 0$$

$$(x+2)(x+7) = 0$$

$$x = -2 \text{ or } x = -7$$

$$4. 17x^2 = -5x + 14$$

$$17x^2 + 5x - 14 = 0$$

$$a = 17 \quad b = 5 \quad c = -14$$

$$ii) x^2 - 7x + 10 = 0$$

$$(x-2)(x-5) = 0$$

$$x = 2 \text{ or } x = 5$$

$$\frac{-5 \pm \sqrt{5^2 - (4 \times 17 \times -14)}}{2 \times 17}$$

$$iii) x^2 + 9x - 20 = 0$$

$$(x-2)(x+10) = 0$$

$$x = 2 \text{ or } x = -10$$

$$\frac{-5 \pm \sqrt{25 + 952}}{34}$$

$$\frac{-5 \pm \sqrt{977}}{34}$$

$$x = 0.77 \text{ or } x = -1.07$$

$$iv) x^2 - 49 = 0$$

$$(x+7)(x-7) = 0$$

$$x = -7 \text{ or } x = 7$$

$$v) 2x^2 - 3x - 20 = 0$$

$$(2x+5)(x-4) = 0$$

$$x = -2.5 \text{ or } x = 4$$

$$1 \quad 20$$

$$2 \quad 10$$

$$4 \quad 5$$

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Maths Paper 1

ACHA 3000

210 3851

i) $x^6 \times x^9 \times x^2 \times x$
 $x^{14} \times x^3$
 x^{17}

2.i) $7x - 1 = 5x + 4$

$$7x = 5x + 5$$

$$2x = 5$$

$$x = 2.5$$

ii) $(2x^2)^4 \times 3x^3$
 $16x^8 \times 3x^3$
 $48x^{11}$

ii) $10(3x+2) = 7(-2x-1)$

$$30x + 20 = -14x - 7$$

$$44x = -27$$

$$x = -\frac{27}{44}$$

iii) $\frac{x^2 \times x^{10} \times x}{x^3}$
 $\frac{x^{13}}{x^3}$
 x^{10}

iii) $\frac{3}{(2x+1)} = \frac{4}{(x-1)}$

$$3(x-1) = 4(2x+1)$$

$$3x - 3 = 8x + 4$$

$$-7 = 5x$$

$$-\frac{7}{5} = x$$

iv) $2\sqrt{x} \times 3\sqrt{x}$
 $x^{1/2} \times x^{1/2}$
 $x^{5/6}$

iv) $(x+2)^2 = (x+3)(x+5)$

$$x^2 + 4x + 4 = x^2 + 8x + 15$$

$$4x + 4 = 8x + 15$$

$$-11 = 4x$$

$$-2.75 = x$$

v) 1
~~1~~ x^0

$$\log 3$$